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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## COBALT IN SEPTEMBER 1996

U.S. consumption of cobalt during January through September 1996 was basically the same as consumption during the first 3 quarters of 1995, according to the U.S. Geological Survey (USGS). U.S. imports of cobalt metal and cobalt contained in chemicals during January through August 1996 were 4% higher than imports during the first 8 months of 1995. Exports of unwrought cobalt and cobalt contained in chemicals were 54% higher in January through August 1996 than during the same period in 1995. Trade data for September will be available in a subsequent issue.

rounded to no more than three significant digits. Totals and percentages were calculated using unrounded data. Domestic data on U.S. cobalt consumption and stocks are developed by the USGS from voluntary surveys of U.S. operations. The data in tables 1 through 3 contain estimates to account for nonrespondents and are subject to revision.

Price update, dollars per pound of electrolytic cobalt (Source-- Platt's Metals Week):

### Note

With the exception of prices, all data in this report have been

### Week ending

Nov. 1

### Price range

20.50-21.50

TABLE 1  
U.S. REPORTED CONSUMPTION OF COBALT MATERIALS 1/

(Metric tons, contained cobalt)

Period	Metal 2/	Oxide and other chemical compounds 3/	Scrap	Total
1995:				
September	264	144	127	534
October	279	144	127	550
November	282	119	133	533
December	250	137	130	517
January-September r/	2,390	1,290	1,150	4,830
January-December 4/	3,200	1,690	1,540	6,430
Year 5/	3,660	1,800	1,540	7,000
1996:				
January	291	145	132	569
February	265	148	124	537
March	279	129	133	541
April	268	129	125	522
May	295	136	128	560
June	259	135	136	530
July	262	151	129	542
August	289	136 r/	132	556 r/
September	280	135	135	550
January-September	2,490	1,240	1,180	4,910

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes metal powder.

3/ Data may include other cobalt materials.

4/ Data based on monthly reports.

5/ Includes annual reports.

TABLE 2  
U.S. REPORTED CONSUMPTION OF COBALT, BY END USE 1/

(Metric tons, contained cobalt)

End Use	1995			1996	
	January- September	January- December 2/	Year 3/	September	January- September
Steel:					
Stainless and heat resisting	28 r/	38	38	3	29
Tool	W	W	146	W	W
Superalloys	1,980 r/	2,650	2,940	210	2,070
Alloys (excludes steels and superalloys):					
Magnetic alloys	521 r/	698	757	59	511
Welding materials (structural and hard-facing) 4/	200	264	287	22	205
Other alloys 5/	44 r/	59	80	5	42
Cemented carbides 6/	570 r/	746	748	85	586
Chemical and ceramic uses:					
Catalysts	535 r/	713	732	53	498
Driers in paints or related usage	603 r/	770	770	54	527
Ground coat frit	126	172	172	21	167
Pigments	W	W	172	W	W
Miscellaneous and unspecified 7/	219 r/	311	163	37	271
Total	4,830 r/	6,430	7,000	550	4,910

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Miscellaneous and unspecified."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data based on monthly reports.

3/ Includes annual reports.

4/ Includes wear-resistant alloys.

5/ Includes nonferrous alloys.

6/ Includes diamond bit matrices, cemented and sintered carbides, and cast carbide dies or parts.

7/ Includes feed or nutritive additive, full-alloy steel, glass decolorizer, mill products made from metal powder, and data indicated by the symbol "W."

TABLE 3  
U.S. REPORTED STOCKS OF COBALT MATERIALS 1/

(Metric tons, contained cobalt)

	Industry 2/				U. S. Government 3/
	Metal 4/	Oxide and other chemical compounds 5/	Scrap	Total	Metal
1995:					
September	257	295	96	648	21,200
October	269	292	101	662	21,000
November	249	317	103	669	20,800
December 6/	323	283	103	709	20,700
Yearend 7/	390	309	103	802	20,700
1996:					
January	309	320	135	764	20,700
February	275	300	150	725	20,700
March	274	706	152	1,130	20,400
April	277	699	138	1,110	20,100
May	258	694	138	1,090	19,800
June	232	695	99	1,030	19,600
July	251	695	99	1,040	19,500
August	363 8/	416 8/	96	875	19,300
September	338	299	98	735	19,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Stocks reported by cobalt processors and consumers.

3/ Data from Defense Logistics Agency, National Defense Stockpile Center. Includes material committed for sale pending shipment.

4/ Includes metal powder.

5/ Data may include other cobalt materials.

6/ Data based on monthly reports.

7/ Includes annual reports.

8/ Data being questioned.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF COBALT, BY COUNTRY 1/

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Metals 2/		Oxides and hydroxides		Salts and compounds 3/		Total cobalt content for the month 5/	Cobalt content, year to date 5/ 6/
	Quantity	Value 4/	Quantity	Value 4/	Quantity	Value 4/		
1995:								
August	615,000	\$36,900,000	73,800	\$2,870,000	201,000	\$2,730,000	723,000	4,610,000
September	399,000	24,400,000	65,200	3,070,000	163,000	2,330,000	493,000	5,100,000
October	531,000	31,700,000	29,700	1,310,000	110,000	1,420,000	583,000	5,680,000
November	259,000	16,200,000	58,900	2,780,000	98,800	1,350,000	328,000	6,010,000
December	411,000	25,900,000	16,300	722,000	16,000	189,000	427,000	6,440,000
January-December	5,530,000	325,000,000	808,000	34,300,000	1,170,000	15,800,000	6,440,000	XX
1996:								
January	515,000	30,000,000	53,000 7/	2,060,000 7/	276,000 7/	3,480,000 7/	627,000	627,000
February	470,000	29,900,000	57,100	2,810,000	25,600 7/	314,000 7/	519,000	1,150,000
March	540,000	36,000,000	49,800 7/	2,450,000 7/	183,000 7/	2,300,000 7/	626,000	1,770,000
April	432,000	27,500,000	147,000	6,370,000	104,000	1,340,000	566,000	2,340,000
May	457,000	27,500,000	62,100	2,730,000	55,200	786,000	515,000	2,850,000
June	606,000 7/	36,000,000 7/	82,200	3,710,000	88,800	1,170,000	689,000	3,540,000
July	571,000	33,000,000	93,900	4,440,000	60,200	778,000	655,000	4,200,000
August:								
Australia	--	--	3,360	70,700	--	--	2,420	7,440
Austria	195	11,100	--	--	--	--	195	195
Belgium	20,900	1,180,000	12,500	476,000	--	--	29,900	219,000
Brazil	16,000	723,000	--	--	--	--	16,000	26,800
Canada	76,500	4,100,000	--	--	--	--	76,500	649,000
China	--	--	--	--	--	--	--	1,250
Finland	21,800	1,080,000	25,300	1,000,000	38,600	405,000	50,400	885,000
France	2,390	220,000	2,310	212,000	--	--	4,060	27,600
Germany	8,900	606,000	--	--	--	--	8,900	72,500
Hong Kong	--	--	--	--	--	--	--	500
Japan	--	--	2,500	72,700	--	--	1,800	24,100
Netherlands	--	--	--	--	--	--	--	5,270
Norway	103,000	5,800,000	--	--	--	--	103,000	1,130,000
Russia	68,600	2,870,000	--	--	--	--	68,600	466,000
South Africa	500	24,200	--	--	--	--	500	12,000
Spain	--	--	5,930 7/	178,000 7/	--	--	4,270	20,200
Sweden	--	--	--	--	--	--	--	708
Switzerland	--	--	--	--	--	--	--	960
United Kingdom	724	53,900	60,000 7/	150,000 7/	--	--	43,900	91,700
Zaire	42,300	2,190,000	--	--	--	--	42,300	334,000
Zambia	118,000	5,980,000	--	--	--	--	118,000	799,000
Total	480,000	24,800,000	112,000	2,160,000	38,600	405,000	571,000	4,770,000

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Unwrought cobalt, excluding alloys; includes cobalt cathode and cobalt metal powder.

3/ Includes cobalt sulfates, cobalt chlorides, cobalt carbonates, and cobalt acetates.

4/ Customs value.

5/ Estimated from gross weights.

6/ Year to date may include revisions to prior months.

7/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF ADDITIONAL COBALT MATERIALS, BY COUNTRY 1/

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Unwrought cobalt alloys		Other cobalt: matte, waste and scrap 2/		Wrought cobalt and cobalt articles	
	Quantity	Value 3/	Quantity	Value 3/	Quantity	Value 3/
1995:						
August	5,680	\$326,000	160,000	\$2,290,000	5,670	\$634,000
September	8,380	242,000	60,200	1,080,000	7,710	516,000
October	10,400	684,000	78,100	1,050,000	15,400	813,000
November	4,020	268,000	33,500	444,000	11,800	901,000
December	6,440	566,000	33,400	631,000	21,200	1,360,000
January-December	98,200	5,330,000	880,000	12,400,000	155,000	9,760,000
1996:						
January	5,110	414,000	30,600	452,000	10,400	563,000
February	6,560	490,000	90,900 4/	833,000 4/	16,000	651,000
March	1,340	107,000	71,200	1,370,000	21,800	1,410,000
April	3,940	213,000	48,700	954,000	19,000	1,270,000
May	3,940	326,000	52,800 4/	1,880,000 4/	19,800	1,270,000
June	2,630	108,000	10,900 4/	396,000 4/	13,800	1,070,000
July	4,380	337,000	72,300 4/	2,820,000 4/	11,500	824,000
August:						
Belgium	--	--	480 4/	38,200 4/	--	--
Canada	110	10,400	653	7,620	888	61,100
Finland	--	--	17,100 4/	1,210,000 4/	--	--
France	1,010	85,200	--	--	1,320	81,400
Germany	289	13,600	2,400	46,800	918	56,500
Japan	59	3,650	7,090	81,000	3,480	249,000
Netherlands	--	--	15,800	248,000	--	--
South Africa	--	--	40,000	362,000	--	--
Sweden	3,660	55,800	130	4,970	--	--
Taiwan	--	--	1,040	20,100	--	--
United Kingdom	2,960	145,000	81 4/	7,550 4/	3,870	227,000
Total	8,080	313,000	84,700	2,030,000	10,500	676,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes other intermediate products of cobalt metallurgy; may include other cobalt-bearing materials from which cobalt is extracted, or from which cobalt-containing chemical compounds are manufactured.

3/ Customs value.

4/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 6  
U.S. EXPORTS OF COBALT MATERIALS 1/

(Kilograms, gross weight of material, except as noted)

	Unwrought cobalt, powders, matte, waste and scrap 2/		Oxides and hydroxides		Salts and compounds 3/		Total cobalt content for the month 5/	Cobalt content, year to date 5/ 6/
	Quantity	Value 4/	Quantity	Value 4/	Quantity	Value 4/		
1995:								
August	72,500	4,900,000	11,600	517,000	32,900	447,000	88,800	815,000
September	151,000	8,590,000	28,900	1,020,000	60,500	931,000	186,000	1,000,000
October	92,900	6,090,000	28,200	511,000	12,400	217,000	116,000	1,120,000
November	72,300	3,260,000	11,200	248,000	25,700	416,000	86,600	1,200,000
December	71,400	4,690,000	18,600	724,000	43,200	772,000	95,300	1,300,000
January-December	898,000	49,000,000	271,000	8,850,000	860,000	7,080,000	1,300,000	XX
1996:								
January	70,200	5,050,000	31,300	889,000	34,500	788,000	101,000	101,000
February	76,700	4,750,000	20,200	642,000	42,000	510,000	101,000	202,000
March	214,000	13,000,000	29,100	1,070,000	336,000	318,000	316,000	518,000
April	168,000	9,640,000	24,300 7/	497,000 7/	15,100	132,000	189,000 r/	707,000
May	145,000	6,930,000	22,700 7/	689,000 7/	20,500	346,000	166,000	873,000
June	159,000	7,500,000	13,300 7/	514,000 7/	20,600	310,000	173,000	1,050,000
July	61,500	2,760,000	30,100 7/	377,000 7/	21,200 7/	279,000 7/	88,300	1,130,000
August	88,700	3,160,000	40,000 7/	362,000 7/	26,600	292,000	124,000	1,260,000

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include other intermediate products of cobalt metallurgy, and unwrought cobalt alloys.

3/ Cobalt acetates and cobalt chlorides.

4/ Free alongside ship (f.a.s.) value.

5/ Estimated from gross weights.

6/ Year to date may include revisions to prior months.

7/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 7  
U.S. EXPORTS OF WROUGHT COBALT, COBALT ORE, AND CONCENTRATES 1/

(Kilograms, gross weight of material, except as noted)

	Wrought cobalt and cobalt articles		Cobalt ore and concentrates	
	Quantity	Value 2/	Quantity	Value 2/
1995:				
August	75,400	\$2,060,000	--	--
September	95,900	2,060,000	21,200	\$32,700
October	41,400	1,220,000	20,000	59,000
November	40,500	1,930,000	50,800	565,000
December	9,070	682,000	1,710	2,700
January-December	485,000	17,800,000	139,000	1,610,000
1996:				
January	38,800	1,640,000	8,050 3/	105,000 3/
February	18,300	1,630,000	5,560 3/	337,000 3/
March	24,100	2,060,000	10,900 3/	130,000 3/
April	25,400	1,890,000	21,700 3/	1,020,000 3/
May	18,800	1,460,000	19,300 3/	174,000 3/
June	62,000	2,150,000	--	--
July	28,500	1,170,000	13,400 3/	496,000 3/
August	67,100	1,660,000	43,500 3/	1,050,000 3/

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Free alongside ship (f.a.s.) value.

3/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.